

Time-Atom Theory

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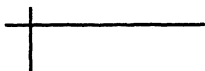
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SYMPOSIUM ON
NIETZSCHE'S "TIME-ATOM THEORY" FRAGMENT



Time-Atom Theory

Friedrich Nietzsche

NACHGELASSENE FRAGMENTE, Early 1873
Kritische Studienausgabe, Band 7 (Berlin & New York, 1988)

Translated by Carol Diethe
(with modifications by Keith Ansell Pearson)

26[12]
Movement in Time

A B

Spatial-point A effects spatial-point B and vice versa.

This requires a period of time, for every effect has to cover a distance.

Successive points in time would compenetrates.

With its effect, A no longer impacts on the B of the first moment. What does this mean: B still exists, and A exists, too, when they meet?

This would mean above {all} that A remains unchanged at this and that point in time. But then A is not an effective force, for this cannot remain the same; for that would mean, it had not been effective.

If we take that which has an effect in *time*, then that which is effective in the smallest moment in time is a different thing.

This means: time proves the *absolute non-persistence* of a force.

All laws of space are therefore thought as *timeless*, that means they must be simultaneous and immediate.

The whole world at a stroke. But then there is no *movement*.

Movement labours under the contradiction that it is constructed according to the laws of space and makes those very laws impossible through the assumption of a time: i.e., it is and it is not at the same time.

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Here we can help by assuming that either space or time = 0.

If I assume space to be infinitely small, all distances between the atoms become infinitely small, i.e., all punctual atoms compenetrates at one point.

But as time is infinitely divisible, the whole world is possible as purely a temporal phenomenon, because I can occupy every time-point with the one space-point, thus being able to place it an infinite number of times. Therefore one should see the essence of a body as *distinct time-points*, i.e., the one point placed at certain distances. Between each interval of time there is still room for infinite time-points; therefore one could imagine a whole corporeal world, all furnished from one point, but in such a way that we dissolve these bodies into interrupted timelines.

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Now only

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a reproducing being is necessary, which holds earlier moments of time beside the present. In this our bodies are imagined (*imaginirt*).

Then there is no coexistence except in representation.

All coexistence would be deduced and represented (*vorgestellt*). The laws of space would be artificially constructed and would not guarantee the existence of space.

The number and type of the succession of that one repeatedly placed point would then constitute the body.

The reality of the world would then consist of a persisting point. Multiplicity would arise through the existence of representing beings, which thought this point repeatedly in the smallest moments of time: beings that do not assume the point to be identical at different time-points and now accept these points as simultaneous.

Translation of all laws of movement into time proportions.

The essence of sensation would consist in gradually sensing and measuring such time figures ever more finely; imagination constructs them as a coexistence and explains the progress of the world according to this coexistence: purely the transference into another language, into that of becoming.

The order of the world would consist in the regularity of the time figures: yet one would then certainly have to think of time as working with a constant force, according to laws which we can only interpret from the coexistence. *Actio in distans temporis punctum*.

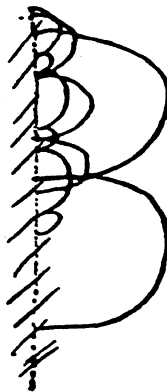
In itself we have no way of positing a law of time.

We would then have a punctual force which would have a relation to every later temporal moment of its existence, i.e., the forces of it would consist of those figures and relations. In every smallest moment the force would have to be different: but the sequence would be in any proportions, and the existing world would consist of the *coming into visibility of these force proportions*, i.e., translation into the spatial.

In atomic physics, one assumes atomic forces to be unchangeable *in time*, thus $\text{o}\nu\tau\alpha$ in the Parmenidean sense. But these cannot be effective. Instead, only absolutely changeable forces can be effective, of the sort that are not the same for one moment.
All forces are only a *function of time*.

- 1) An effect of a sequence of time-moments is *impossible*: for two such time-moments would compenetrare. Thus every effect is actio in distans, i.e., through a leap.
- 2) How an effect of this kind in distans is possible we do not know at all.
- 3) Fast, slow, etc. in the whole type of this effect. I.e., the forces, as functions of time, express themselves in the relations of near or distant time-points, namely, fast or slow. The force lies in the degree of acceleration. The highest acceleration would lie in the effect of one time moment on the next, i.e., it would then be = infinitely great.
The greater the slowness, the greater the intervals of time, the greater the distans.
Therefore the relation of distant time-points is slowness: all slowness is, of course, relative.

Timeline.
Real: a space-point.
Relations of its different time-positions.
Where do the relations exist.
No movement in time is *steady*.



We measure time against something *remaining spatial* and therefore presuppose that there is a *continuous* time between time-point A and time-point B. But time is no continuum at all, there are only *Totally different time-points*, no line. Actio in distans.

We can only speak of time-points, no longer of time.

The time-point has an effect on another time-point, thus *dynamic* characteristics to be assumed.

Time-atom theory.

It is possible

- 1) to reduce the existing world to punctual space atomism,
- 2) to reduce this again to time atomism,
- 3) the time atomism ultimately coincides with a theory of sensation. The *dynamic time-point* is identical with the *sensation-point*. For there is no simultaneity of sensation.